BIOLOGY 3: Introduction to Biology
Sections 0134 and 0135

Los Angeles Mission College **Fall, 2013**
Lecture: MW 8:55-10:20 AM in Center for Math & Sciences (CMS) Room 004
Laboratory Sections:
Section 0134: M 10:30 AM-1:40 PM in CMS 110
Section 0135: W 10:30 AM-1:40 PM in CMS 110

Angela Echeverri, Ph.D.
e-mail: echeveac@lamission.edu
Voicemail: 818-364-7704
Office hours: MW 8:05-8:55 am (CMS 004) and TTh 8:15-8:55 am (CMS 002 or 105)
T 1:40-2:00 PM (CMS 002) and Th 10:20-12:20 pm (CMS 002 or 105)
or by appointment.

PREREQUISITES: None **ADVISORY:** ***English 28 or ESL 8 or the equivalent***

COURSE DESCRIPTION
Hours: Lecture – 3 Carnegie hours/wk, Laboratory – 3 Carnegie hours/wk; 4 semester units
Articulation: Meets CSU/UC General Education requirement of natural science with a lab.
CSUN Biology 101; CSULA Biology 155 & 156; UCLA Life Science 15; UCR Biology 2

Biology 3 is a comprehensive introductory level course designed to allow students to identify and describe the major concepts of modern and classical biological sciences including: the fundamental physical and chemical principles underlying the life sciences; the basics of cell structure and function; the underlying principles of **heredity**, **reproduction**, and **development**; and the intimate interplay between organisms and their **environment**. The relationship between **STRUCTURE** and **FUNCTION**, from atoms to **ecosystems**, provides a unifying theme for the course. Concepts will be reinforced by active participation in *laboratory exercises*, lectures, discussions, readings, and written assignments, constructed specifically to allow students to learn about the scientific process and its effect on our daily lives.

STUDENT LEARNING OUTCOMES

Biology 3 students will work *together* as a laboratory team to answer questions, in writing, on laboratory techniques learned in the course and will *design* a simple experiment using those methods.

REQUIRED BOOKS AND MATERIALS

Biology: Concepts and Connections, Campbell, Reece, Taylor, Simon, and Dickey; Pearson-Benjamin Cummings - 7th edition 2012. Earlier editions or e-text versions of the book may be used. **Note:** We will also be using the *Mastering Biology* system, you will need to purchase the Mastering Biology ***code*** if your book is used or does not have a valid code. ISBN 13: 978-1256302407 (book + Mastering Biology bundle) or ISBN 13: 978-0321696816 (bound textbook by itself). An e-text is also available with the code.
In order to access the Mastering Biology Web site click on the link below:
http://www.masteringbiology.com/ **COURSE ID IS: BIOLOGY3FALL13**

Biology 3 Lab Manual: The 2013 (not the older versions) lab manual can be purchased from the LAMC bookstore before the semester begins OR click THIS link to download the manual for free before the semester begins:
http://lamission.edu/lifesciences/Biology3Laboratories.aspx

Scantron 882-E forms and a number 2 pencil will be needed for exams and some quizzes.

COURSE GRADE

There will be 1000 possible points for the entire course as shown below:

Lecture Points (650 points)	
3 Lecture Exams	**30% of Grade (300 points)**
Final Exam (Cumulative)	**15% of Grade (150 points)**
Lecture Quizzes	**15% of Grade (150 points)**
Written Assignment	**5% of Grade (50 points)**
Laboratory Points (350 points)	
Laboratory Exam	**10% of Grade (100 points)**
Lab Quizzes	**10% of Grade (100 points)**
Lab Exercise Worksheets	**10% of Grade (100 points)**
Lab Participation	**5% of Grade (50 points)**
	1000 points total

Your Course Grade will be weighted as follows: 65% Lecture – 35% Laboratory.

LECTURE:
Exams & Quizzes: Exams and quizzes will consist of multiple choice, short answer and essay questions. Exam multiple-choice questions are to be answered on **Scantron** forms. Most lecture quizzes will be administered online using the Etudes and Mastering Biology sites. Quiz dates and times will be announced during lecture. **No make-up exams or quizzes will be given.** The first missed quiz or exam score will be replaced by the average score for the other quizzes or exams taken during the semester. Additional missed quizzes or exams will result in a grade of zero.
Written Assignment: Students will prepare a brochure on a human disease. Guidelines for the Disease Brochure will be detailed in a separate handout.

LAB:
Lab Quizzes: Lab quizzes will be administered online or at the beginning of most labs. Quizzes are to be answered on a **Scantron 882-E** form or online.
Lab Worksheets: Completed lab worksheets are due at the beginning of the following lab period. Late or incomplete lab sheets will only receive partial credit.
Lab Exam: A lab final exam will be administered toward the end of the semester. The lab exam will be cumulative.
Lab Participation: Students are expected to read each lab exercise ***BEFORE*** class. Lab participation scores will be based on preparation, attendance, completion of labs, lab safety, cleanup, teamwork, microscope care and usage, appropriate use of equipment and supplies, as well as participation in class and online activities. ***Ten points will be deducted from the***

50-point participation total for each unexcused absence from the laboratory. You will be allowed to miss one laboratory without penalty. Additional absences will impact your grade.

Grading Scale:	**900+ points** (90-100%)	**A**
	780-899 points (78-89%)	**B**
	650-779 points (65-77%)	**C**
	550-649 points (55-64%)	**D**
	0-549 points (below 55%)	**F**

ATTENDANCE POLICY

Attendance is required and roll will be taken. **You are responsible for any information, date changes, etc., presented in class, whether or not you are present.** Students missing more than 2 consecutive classes may be dropped.
Students given add slips ***must*** complete the process by **Friday, September 6th**.

If you stop attending class or wish to drop a class you must drop the class yourself online on or before November 17, 2013. Failure to do so may result in a grade of "F" in that class. Students adding or withdrawing from the class must do so by the following dates:

> **Friday, September 6th**: Last day to add, audit or transfer class section.
> **Sunday, September 8th**: Last day to drop 16-week classes without a "W" on your transcript and to drop classes without incurring fees or with a refund
> **Sunday, November 17th**: Last day to drop classes with a "W." A letter grade is required after this date and forward.

Note: *A new state policy in effect as of Summer 2012 limits students to 3 attempts per course. Receiving a grade or "W" for a course counts as an attempt, regardless of when the course was taken. Withdrawal by September 8, 2013 will avoid a "W" and will not count as an attempt.*

SPECIAL ACCOMMODATIONS

If you require special accommodations for a disability, religious holiday, etc., please inform your instructors within the first week of the course and we will accommodate you if at all possible. For accommodations due to disability, you must consult with the Disabled Student Programs and Services office after which we will abide by their recommendations.

IMPORTANT WEBSITES & ONLINE RESOURCES

http://www.lamission.edu/~echeveac
Your instructor's website for downloading various lecture related materials.

https://myetudes.org/portal
Announcements, quizzes, and other important information will be posted on this site.
You can use the Etudes site to take your quizzes, monitor grades, and communicate with your instructor and each other, as well as ask/answer questions about lecture, laboratory, and assignments. If you already have used an Etudes account, sign in using your userid and

password. If you have never used an Etudes account before you can go to https://myetudes.org/portal to set up your account. Detailed instructions, tutorials, and support for online students can be viewed at http://www.lamission.edu/online/

http://www.masteringbiology.com/
The textbook publisher's online supplemental study material, practice quizzes, etc.

http://www.lamission.edu/lifesciences/Biology3Laboratories.aspx
This is the LA Mission College Life Sciences department web page where you can download Biology 3 laboratory exercises and worksheets.

http://elearning.lamission.edu/
Online labs and tutorials for Biology 3 and other science classes at LA Mission College.

RECOMMENDATIONS FOR SUCCESS

This is a demanding class covering a lot of information. Here are some suggestions:

- Do **NOT** fall behind in the course, keep up with the material on a weekly basis
- Each time you study, spend a few minutes reviewing previous lessons (this is the secret to long term memory)
- **Outline** the Powerpoint notes, this will help you to mentally organize the large amount of material you will be learning
- If you are having trouble with the material, take advantage of my office hours before class and/or of the free tutoring services available to LAMC students
- Use associations, acronyms to help you remember things
- Create flash cards and form study groups with your classmates
- **Know the key terms** (you can't answer questions correctly if you don't!)
- At a **minimum**, you should **learn** the course material **3 times** in order to retain it well for the exams and quizzes:
  1) **Comprehend** the class material during the lecture
  2) **Read** the corresponding material in the text while reviewing your notes
  3) **Review** your notes and key terms before the exams

*****Prepared students do well in this class*****

COLLEGE RESOURCES FOR BIOLOGY STUDENTS

Science Success Center (SSC): Free tutoring is available for Biology 3 students on the main campus. The SSC is open Monday through Friday between 11:00 am and 7:00 pm. For more information visit: http://www.lamission.edu/learningcenter/ssc.aspx

Admissions and Records: Students can register for classes, request transcripts, file petitions for graduation, and drop classes at this office. For more information call 818-833-3322 or visit: http://www.lamission.edu/admissions/

Assessment Center: Offers student assessments in English, English-as-a-Second-Language (ESL) and Mathematics. Please contact the Assessment Center at (818) 364-7613 for more information or visit http://www.lamission.edu/assessment/

Bookstore: For hours of operation, book availability, buybacks, and other information call 818-364-7767 or 7768 or visit http://eagleslanding.lamission.edu/default.asp

Counseling Department: For appointments and information call 818-364-7655 or visit http://www.lamission.edu/counseling/

Disabled Students Programs and Services (DSP&S): For appointments, eligibility and information call 818-364-7732 or visit http://www.lamission.edu/dsps/

Extended Opportunity Programs and Services (EOPS): For appointments, eligibility and information call 818-364-7645 or visit http://www.lamission.edu/eops/

Financial Aid: For information and applications call 818-364-7648 or visit http://www.lamission.edu/financialaid/

Library: For information on hours, resources, workshops, and other services contact 818-364-7106 or visit http://www.lamission.edu/library/

STEM Office: For information on free tutoring, resources and academic counseling for STEM (Science, Technology, Engineering, and Technology) students visit: http://www.lamission.edu/stem

Tutoring Services in Learning Center: Laboratories for Learning, Writing, Math & Science. Walk-in and appointment services offered. Call 818-364-7754 or visit www.lamission.edu/learningcenter/

Code of Honor and Integrity

Los Angeles Mission College

Department of Life Sciences

Students at Los Angeles Mission College, because they are members of an academic community dedicated to the achievement of excellence and the pursuit of honor, are expected to meet high standards of personal, ethical, and moral conduct. These standards require personal integrity and a commitment to honesty without compromise. Without the ability to trust in these principles, an academic community and a civil society cannot exist. Los Angeles Mission College students and faculty are as committed to the development of students with honesty and integrity as they are to the academic and professional success of its students.

The **Code of Honor and Integrity** is an undertaking of the students, first and foremost, both individually and collectively, that they will:

1. Not give or receive dishonorable aid during exams, quizzes or assignments

2. Do their share and take an active part in seeing to it that fellow students, as well as themselves, uphold the spirit and letter of the Code of Honor and Integrity.

Some examples of conduct that are regarded as being in violation of the Honor Code include:

- Copying from another's examination or quiz, or allowing another to copy from one's own papers
- Using any unpermitted source of information, human or other, during an exam, quiz or assignment that influences the grade; this includes the use of technological devices
- Any student-to-student collaboration that is unpermitted
- Plagiarism (plagiarism is defined as the use, without giving reasonable and appropriate credit to, or acknowledging the author or source, of another person's original work)
- Representing as one's own work as the work of another
- Giving or receiving aid on an academic assignment under circumstances in which a reasonable person should have known that such aid is not permitted

As a part of the effort to promote an environment of honesty and integrity during quizzes and examinations, the following guidelines will apply for any courses in the Department of Life Sciences:

1. Students will leave all books and all other non-essential items (e.g. paper, electronic devices) on the floor so that they are not useable nor block the sight line between professor and student. No electronic devices will be in reach.
2. Students will not communicate in any way that will dishonorably assist themselves or another student.

3. Students will leave the room during an exam only if permitted by the professor's policy. If permitted, only one student may leave the room at any time and be gone for only the average length of time needed for the stated purpose. Students will leave all purses, bags, books, phones, jackets, etc., in the classroom during the absence.

4. Students will promote the spirit and letter of the **Code of Honesty and Integrity** by dissuading fellow students from dishonest activity and, when such casual persuasion does not work, informing the professor of the possible dishonest activity, either anonymously, or otherwise.

5. Students will make every effort to avoid even the appearance of dishonesty or lack of integrity.

Violation of this policy will not be tolerated and violators will be subject to serious penalties. The success of the **Code of Honor and Integrity** is based upon the collective desire of students, faculty and the community to live in an environment that embraces respect for that which is right – both in the college and in society as a whole.

TENTATIVE CLASS SCHEDULE-FALL 2013

Dates are subject to change as needed

Week	Date	Monday Lecture *Laboratory Section 0134*	Date	Wednesday Lecture *Laboratory Section 0135*
1	8/26	Introduction to Biology 3 Chapter 1: Biology: Exploring Life ***Lab: Scientific Method and Metric System***	8/28	Chapter 2: The Chemical Basis of Life ***Lab: Scientific Method***
2	9/2	**LABOR DAY** **NO CLASSES**	9/4	Chapter 2: Chemical Basis of Life ***Lab: Metric System***
3	9/9	Chapter 3: The Molecules of Cells ***Lab: Molecules, Water, & pH***	9/11	Chapter 3: The Molecules of Cells ***Lab: Molecules, Water, & pH***
4	9/16	Chapter 4: A Tour of the Cell ***Lab: Microscopy and Cell***	9/18	Chapter 4: A Tour of the Cell ***Lab: Microscopy and Cell***
5	9/23	Chapter 5: The Working Cell ***Lab: Macromolecules***	9/25	**EXAM 1**: **Chapters 1-4** ***Lab: Macromolecules***
6	9/30	Chapter 5: The Working Cell ***Lab: Enzymes***	10/2	Chapter 6: How Cells Harvest Chemical Energy ***Lab: Enzymes***
7	10/7	Chapter 6: How Cells Harvest Chemical Energy ***Lab: Respiration***	10/9	Chapter 7: Photosynthesis ***Lab: Respiration***
8	10/14	Chapter 7: Photosynthesis ***Lab: Photosynthesis***	10/16	**EXAM 2: Chapters 5, 6 & 7** ***Lab: Photosynthesis***
9	10/21	Chapter 8: Cellular Basis of Reproduction and Inheritance ***Lab: Mitosis & Meiosis***	10/23	Chapter 8/9: Cellular Basis of Reproduction and Inheritance ***Lab: Mitosis & Meiosis***
10	10/28	Chapter 9: Patterns of Inheritance ***Lab: Genetics***	10/30	Chapter 10: Molecular Biology of the Gene ***Lab: Genetics***
11	11/4	Chapter 10: Molecular Biology of the Gene ***Lab: DNA & Gene Expression***	11/6	Chapter 13: How Populations Evolve ***Lab: DNA & Gene Expression***
12	11/11	**VETERAN'S DAY** **NO CLASSES**	11/13	**EXAM 3: Chapters 8, 9, 10 & 13** ***Lab: Natural Selection***
13	11/18	Chapter 20: Animal Structure and Function ***Lab: Natural Selection***	11/20	Chapter 21: Digestion & Nutrition ***Lab: Cardiovascular System & Heart***
14	11/25	Chapter 22: Gas Exchange ***Lab: FINAL LAB PRACTICAL EXAM***	11/27	Chapter 23: Circulation ***Lab: FINAL LAB PRACTICAL EXAM***

15	12/2	Chapter 27: Reproduction and Development ***Lab: Plant Kingdom or Field Trip***	12/4	Chapter 27: Diseases of the Reproductive System **Final Review-Last Class** ***Lab: Plant Kingdom or Field Trip***
16	12/9	**BIOLOGY 3** **LECTURE FINAL EXAM** **10:00 AM-12:00 PM**	12/13	**NO CLASS-FINALS WEEK**

BIOLOGY 3 LABORATORY SCHEDULE

Week	**Monday Lab Section 0134**		**Wednesday Lab Section 0135**	
	Date	**Lab Exercise**	**Date**	**Lab Exercise**
1	**8/26**	Scientific Method and Metric System	**8/28**	Scientific Method
2	**9/2**	**LABOR DAY** **NO CLASSES**	**9/4**	Metric System
3	**9/9**	Molecules, Water, & pH	**9/11**	Molecules, Water, & pH
4	**9/16**	Use of the Microscope and Cell Structure	**9/18**	Use of the Microscope and Cell Structure
5	**9/23**	Macromolecules	**9/25**	Macromolecules
6	**9/30**	Enzymes	**10/2**	Enzymes
7	**10/7**	Fermentation and Cellular Respiration	**10/9**	Fermentation and Cellular Respiration
8	**10/14**	Photosynthesis	**10/16**	Photosynthesis
9	**10/21**	Cell Division: Mitosis & Meiosis	**10/23**	Cell Division: Mitosis & Meiosis
10	**10/28**	Principles of Genetic Inheritance	**10/30**	Principles of Genetic Inheritance
11	**11/4**	DNA & Gene Expression	**11/6**	DNA & Gene Expression
12	**11/11**	**VETERAN'S DAY** **NO CLASSES**	**11/13**	Natural Selection
13	**11/18**	Natural Selection	**11/20**	Cardiovascular System & Heart
14	**11/25**	**FINAL LAB** **PRACTICAL EXAM**	**11/27**	**FINAL LAB** **PRACTICAL EXAM**
15	**12/2**	Plant Kingdom	**12/4**	Plant Kingdom
16	**12/9**	FINALS WEEK NO LAB	**12/11**	FINALS WEEK NO LAB

COURSE OBJECTIVES -

Lecture Objectives: Upon completion of this course a successful student will:

1. Discuss the scientific method, including identification of dependent, independent, and standardized variables, and the role of a control group.
2. Apply the metric system of measurement: gram, liter, meter, and degree Celsius.
3. Explain the theory of evolution by means of natural selection, and evidence across biological disciplines.
4. Interpret the Linnean system of taxonomical classification.
5. Identify properties that distinguish living and non-living things.
6. Compare procaryotes and eucaryotes.
7. Describe the structure of atoms and the rules underlying the formation of molecules.8. Discuss the unique properties of water and the concept of pH.
9. Illustrate the structure and function of major biological molecules: carbohydrates, lipids, proteins, and nucleic acids, and how to perform simple qualitative tests in the lab.
10. Describe cell structure: including major organelles of eukaryotic cells.
11. Operate the microscope to view living things on the cellular level.
12. Explain the role of enzymes in the control of chemical reactions in organisms, and how to assay enzyme activity in a laboratory setting.
13. Distinguish endergonic and exergonic reactions, and the role of ATP in energy transformations.
14. Compare the similarities and differences between cellular respiration and photosynthesis in the regulation of energy transformations, and how to model these processes in the laboratory.
15. Explain the cellular basis of asexual and sexual reproduction, and the processes of mitosis and meiosis, including examination of the mitosis in the microscope.
16. Identify simple Mendelian patterns of inheritance and the use of Punnet squares in the analysis of monohybrid and dihybrid crosses.
17. Discuss the modern concept of a gene, including the processes of transcription and translation.
18. Compare the basic structure and function of angiosperms and gymnosperms.
19. Describe the structure and function of important human organ systems, including at least: digestive, circulatory, and reproductive.

Laboratory Objectives: Upon completion of this course a successful student will:

1. Apply the basic principles of the scientific method.
2. Employ the metric system of measurement to measure length, mass and volume.
3. Prepare a solution and determine its pH.
4. Differentiate among the different chemical tests for biological macromolecules.
5. Explain the parts of the microscope, use it properly and create a wet-mount slide for examination.
6. Set up a chemical reaction using enzymes and analyze how different physical factors affect its function.
7. Explain the different reactions of cellular respiration.
8. Construct a simple experiment on the effects of light on the reactions of photosynthesis.
9. Differentiate between the processes of mitosis and meiosis and draw pictures of what happens to chromosomes.
10. Isolate DNA from mammalian cells and solve Punnett square problems.

11. Interpret the results of DNA fragments on an agarose gel and compare with a suspect's banding pattern.
12. Perform a blood pressure exam and take the heart rate on a classmate.
13. Discuss the role of digestive enzymes and set up reactions to demonstrate their function.
14. Compare and contrast the different sensory systems of the human body.
15. Label the parts of a typical angiosperm and describe their functions.
16. Assess the role of flowering plants in an ecosystem and their role in agriculture.

OTHER INFORMATION